Contact Sheet

Date plan submitted to the Department of Water Resources:	September 27, 2002
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The water supplier is a:	County Water District
The water supplier is a:	Retailer
Utility services provided by the water supplier include:	Water, Wastewater, Recycled Water
Is this agency a Bureau of Reclamation Contractor?	No*
Is this agency a State Water Project Contractor?	No

*In 1970, CCWD entered into a non-CVP contract (14-66-200-5057A) with the U.S. Bureau of Reclamation for 30,928 AF of water from New Hogan Reservoir.

SECTION 1: Public Participation

LAW:
Section 10642. Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan. Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published…After the hearing, the plan shall be adopted as prepared or as modified after the hearing.

1.1 Introduction

The California Legislature approved the Urban Water Management Plan Act (Appendix 1) in 1982, requiring utilities serving more than 3,000 customers or providing more than 3,000 acre-feet of water per year to prepare an Urban Water Management Plan (UWMP) to promote water conservation and efficient water use. In the act, the Legislature finds and declares as follows:

- The waters of the state are a limited and renewable resource subject to ever increasing demands.

- The conservation and efficient use of urban water supplies are of statewide concern; however, the planning for that use and the implementation of those plans can best be accomplished at the local level.

- A long-term, reliable supply of water is essential to protect the productivity of California's businesses and economic climate.

- As part of its long-range planning activities, every urban water supplier should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry and multiple dry water years.

The intent is to provide assistance to water agencies in carrying out their long-term resource planning responsibilities to ensure adequate water supplies to meet the needs of both existing customers and future demands for water.

The Legislature also finds and declares that it is the policy of the State as follows:

- The management of urban water demands and efficient use of water shall be actively pursued to protect both the people of the state and their water resources.

- The management of urban water demands and efficient use of urban water supplies shall be a guiding criterion in public decisions.

- Urban water suppliers shall be required to develop water management plans to actively pursue the efficient use of available supplies.

On December 19, 1985, CCWD's Board of Directors adopted an Urban Water Management Plan under Resolution No. 85-176. The plan was submitted to Jonas Minton at DWR on December 26, 1985. CCWD was an original signatory of the Urban Water Management MOU in 1991, and is a current member of the California Urban Water Conservation Council (CUWCC).

1.2 Public Participation

CCWD prepared this updated Urban Water Management Plan (UWMP) in compliance with Assembly Bill No. 797 (AB797, Klehs) of the 1983-1984 Regular Session, as amended by the California Legislature in July 1990 (Water Code Section 10610, Urban Water Management Planning Act, et seq.), and in accordance with the California Urban Water Conservation Council Guidelines. DWR's Sample 2000 Urban Water Management Plan was used as a model in preparing the plan.

To encourage public participation in the development of CCWD's UWMP, a public meeting/workshop was held to promote public participation in the development of this Urban Water Management Plan on Thursday, August 29, 2002, during which the District's Board of Directors sought public input (Appendix 2). Notices for the workshop were mailed directly to a number of local and state agencies and associations to encourage review and comment on the plan (Table 1.1, Appendix 3). Notices were also posted on CCWD's Internet web page (ccwd.org). In accordance with Section 6066 of the Government Code, the workshop was publicly noticed in the local newspaper, The Calaveras Enterprise (Appendix 4). Copies of the draft report have been made available for public review at CCWD's main office in San Andreas and at the main branch of the Calaveras County Public Library.

1.3 Plan Adoption

This UWMP was prepared during the first half of calendar year 2002. The CCWD Board of Directors adopted the UWMP on August 29, 2002. The UWMP is hereby submitted to the California Department of Water Resources. Attached to the cover letter addressed to the Department of Water Resources and included as Appendix 5 are copies of the signed Resolution No. 2002-71, adopting the UWMP. This plan includes all information necessary to meet the requirements of California Water Code Division 6, Part 2.6 (Urban Water Management Planning).

1.4 Agency Coordination

> **LAW**:
> *Section 10620 (d) (2).* Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.

CCWD's staff regularly communicates with county agencies, including Planning, Health, Environmental Health, Public Works, and the Office of Emergency Services during the process of planning, developing, and managing water resources within Calaveras County. CCWD worked closely with the County Planning Department in preparing a County Water Master Plan in April 1995

(Revised January 1996), which was developed to assess available water supplies and future demands for CCWD's and neighboring purveyors' service areas. This countywide approach was taken in coordination with other purveyors to ensure that Calaveras County's water needs were quantified to gain understanding of other purveyors' source areas and activities, and to determine if opportunities existed for mutually beneficial projects related to the management of water supplies or treated wastewater. CCWD is currently in the process of updating the Engineering and Financial Master Plans for its water and wastewater treatment facilities.

CCWD is an active partner with Calaveras County, the Calaveras Council of Governments and the City of Angels Camp in support of a countywide Geographic Information System (GIS). We provided much of our Computer Aided Drawing (CAD) based parcel layer for use in the initial development of the county's Assessor's Parcel Number (APN) parcel layer. CCWD participated in a coordinated, multi-agency aerial imagery project with the above partners as well as CalTrans, California Department of Forestry (CDF) and Bureau of Land Management (BLM). Calaveras County was photographed by DWR in 2000 and by Sanborn Map Company for the countywide GIS project in 2002. This project was made possible through the coordinated efforts and participation of the above agencies. The District has on-line access to the county's GIS data files, and is developing expertise in utilizing the data. It is anticipated that improved planning and review capabilities for our water resources will result from the use of this information.

CCWD's water sources are shared in common with other urban and agricultural interests in Calaveras and adjoining counties. CCWD has solicited input from these entities, which include state and federal agencies, other purveyors and community organizations. The District wishes to share and coordinate the development of the plan with all interested parties. Table 1.1 summarizes the agencies and groups involved in this process with CCWD.

Table 1.1
Coordination and Public Involvement in CCWD Urban Water Management Plan

ENTITIES	ACTIONS					
	HELP WRITE UWMP	CONTACTED FOR ASSISTANCE	SENT COPY OF DRAFT	COMMENTS ON DRAFT	ATTENDED PUBLIC MEETINGS	SENT NOTICE OF INTENTION TO ADOPT
Amador Water Agency			x			x
Angels City Water			x			x
Blue Lake Springs Mutual			x			x
Bear Valley Water District			x			x
Brown & Caldwell		x	x			x
Calaveras Cattleman's Association			x			x
Calaveras County Environmental Health			x			x
Calaveras County Farm Bureau			x			x
Calaveras County OES			x			x
Calaveras County Planning Dept			x			x
Calaveras County Public Works			x			x
Calaveras Public Utility District		x	x			x
Calaveras River Watershed Stakeholders			x			x
Calif Dept of Water Resources		x	x			x
Calif DHS, Drinking Water Program			x			x
East Bay Municipal Utility District			x			x
Fly-In Acres Mutual Water			x			x
Lake Alpine Water Company			x			x
Mokelumne Hill Sanitary District			x			x
Public Libraries		x	x			x
San Andreas Sanitary Dist			x			x
Snowshoe Springs Mutual Water			x			x
State Water Resources Control Board			x			x
Stockton East Water District			x			x
Tuolumne Utilities District		x	x			x
Union Public Utility/Sanitary District			x			x
Valley Springs Public Utility District			x			x

CCWD is a member agency of many prominent regional and national water and wastewater associations. Affiliation with these entities aids the District by providing resources and contacts that assist in water resource management, keeping staff apprised of changing industry standards and regulations, conferences and events, and public education opportunities and resources relating to the UWMP. A list of these associations is provided in table 1.2.

Table 1.2
CCWD Water/Wastewater Association Affiliations

Association of California Water Agencies (ACWA)
American Water Works Association (AWWA)
California Rural Water Association
California Urban Water Conservation Council (CUWCC)
California Association of Sanitary Agencies (CASA)
Water Education Foundation
Wastewater Environmental Federation

1.5 Supplier Service Area

LAW:
Section 10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

10631. (a) Describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.

CCWD's service area is coincidental with Calaveras County's boundaries. The District currently provides water service to approximately 10,000 municipal and residential/commercial customers through five independent water systems located throughout the county. The five water systems are identified as Ebbetts Pass, Copper Cove, Jenny Lind, West Point and Sheep Ranch. Of the five systems, only the Ebbetts Pass District exceeds 3,000 connections. CCWD currently provides wastewater service to approximately 3,300 customers in six improvement districts. CCWD provides water and/or wastewater service to approximately 65% of the residents of Calaveras County. Other water purveyors,

private wells and springs serve the remainder of the population. Map 1.1 shows CCWD's service area and the five water systems.

1.5.1 Water Service & Systems

CCWD operates five water treatment facilities with a combined treatment capacity of over 13 million gallons per day. The water facilities include approximately 290 total miles of transmission and distribution pipelines ranging from 4 to 20 inches in diameter, and 31 storage tanks with a capacity of over 14.5 million gallons.

1.5.2 Wastewater Service & Systems

The district operates five major wastewater treatment facilities and several small isolated systems serving over 3,000 wastewater connections. Collection and transport systems consist of over 125 miles of 6- to 10-inch lines, 44 pump stations, and facilities for emergency power and odor control. The effluent produced by the treatment facilities is disposed of by two principal means – subsurface infiltration galleries (leach field) and spray disposal. Three of the plants have facilities to recycle wastewater for golf course irrigation,

Map 1.1 outlines the geographic boundaries of CCWD's service area and the location of CCWD's water and wastewater treatment facilities.

1.5.3 Climate

Calaveras County is situated in a transitional zone between the San Joaquin Valley and the Sierra Nevada. The climate across the county is, therefore, as varied as its topography. Warm, dry summers and temperate winters prevail in the western foothills, with temperatures ranging from the middle 30s to the high 90s, occasionally exceeding 100 degrees Fahrenheit during the summer. Mild summers and cold winters characterize the mountainous eastern region, with temperatures ranging from the low 20s to the middle 80s. Annual precipitation generally increases with altitude and occurs in the form of rain or snow, depending

upon the elevation. Snow accounts for much of the precipitation in the higher elevations.

Table 1.3 summarizes the demographic/climatic characteristics of the five individual water systems within CCWD's service area.

Table 1.3
Water System Connections and Demographics

WATER SYSTEM	NUMBER OF CONNECTIONS		GEOGRAPHIC AREA (ACRES)	ELEVATION (FEET/MSL)	ANNUAL PRECIP	AVERAGE TEMP (JAN/JULY)
	WATER	WASTE WATER				
Ebbetts Pass (Vallecito)	5,133	1,407	16,220	2,400-5,280	53", snow/rain	36° / 67°
Copper Cove	1,614	1,109	3,270	510-1,150	20"	45° / 78°
Jenny Lind	2,687	616	6,100	200-900	20"	45° / 78°
Sheep Ranch	47	0	120	2,240-2,400	37"	36° / 77°
West Point/ Wilseyville	527	182	1,900	2,400-3,160	37"	36° / 77°

(Insert Map 1.1)

1.5.4 Topography

Calaveras County encompasses approximately 645,000 acres of land ranging from the San Joaquin Valley to the Sierra Nevada Mountains. Topography varies from ranch land to foothills in the western and southern portions of the county to high mountainous areas typical of the Sierra Nevada in the northern and eastern portions. Elevations range from 300 to 8,170 feet. San Andreas, the county seat, is approximately 100 miles east of San Francisco and 60 miles southeast of Sacramento. The city of Angels Camp is the only incorporated community within Calaveras County. The Ebbetts Pass, Sheep Ranch and West Point systems are characterized by moderate to steep sloping topography, while the Jenny Lind and Copperopolis systems are comprised of valleys and gently rolling hills.

1.5.5 Soils & Land Use

The geology of Calaveras County is characterized by meta-sediments and meta-volcanic rock of Mesozoic age, overlain by tertiary sediment and volcanic rocks. Large granite outcrops are visible in the highest elevations.

Soils in the upper elevations are typically fine textured meta-volcanic residual of moderate depth and good drainage. In the lower elevations soils are residual, derived from meta-sedimentary slate and schist, meta-basic igneous rocks, granite rock, and volcanic conglomerate.

Most soils in lower elevations are moderately shallow to very shallow, generally loamy, and range from neutral to slightly acid or acid. Soils close to the valley floor are deep, moderately well to well drained, and favorable for agriculture (Brown and Caldwell 1995).

Plant communities in Calaveras County include grassland, brush land and chaparral, deciduous forest, and coniferous forest. Dominant species

include large oaks, willows, and alders, with undergrowth of herbaceous plants and scattered low shrubs such as California scrub oak, dwarf live oak, chemise, digger pine, manzanita, poison oak, elderberry, California bay, and wild grape, depending on water availability. Several significant stands of Valley oak remain, and two groves of giant Sequoias exist at Calaveras Big Trees State Park; a portion of the northern grove is within the Calaveras River watershed.

Tourism and recreation, forest products, mineral resources, and agricultural products comprise significant elements of the area's economic base. As a result, a variety of land uses are found within CCWD's service area, including residential, forested, industrial, agricultural, and recreational.

Historic placer mining occurred mainly in the mining district above Highway 49. In more recent years, asbestos, gold, industrial minerals, limestone, and sand and gravel have been the most active segments of the mineral industry in the county.

Land use in the foothills is primarily for cattle ranching, while orchards, vineyards, and row crops are grown at several locations in the lower elevations.

Currently, lumber companies within Calaveras County are implementing California's Forest Practice Rules (FPRs) that are aimed at protecting water quality through the prevention of hillslope erosion, the interception of sediment-laden runoff, and control of other non-point sources of pollution. There has been concern regarding the adequacy of the current California Forest Practice Rules presented in CCWD's Watershed Sanitary Survey Updates. The Watershed Sanitary Survey Update for the Calaveras River (February 2001), the Upper Mokelumne River (December 2000), and the

Stanislaus River (June 2001) all state that logging activities pose a potential threat to surface water quality. CCWD is currently reviewing selected Timber Harvest Plans to identify potential issues relating to water quality.

Recreational activities available at locations throughout the service area include water sports such as swimming, boating, fishing, and water-skiing. Other non-water activities available throughout the watershed include camping, hiking, Off Highway Vehicle (OHV) trail riding, horseback riding, picnicking, and sightseeing.

1.5.6 CCWD Background & History

CCWD was organized in November 1946, under the laws of the State of California, as a public agency, to develop and administer the water resources and wastewater service in Calaveras County. CCWD developed power from the North Fork Stanislaus Hydroelectric Development Project (FERC 2409), completed in 1990, and the New Hogan Power Project (FERC 2903) on the Calaveras River, completed in 1986.

CCWD is the only “water district” within Calaveras County, although there are a number of other water service providers. It is the largest public water purveyor in the county in terms of service area, number of customers served, and amount of water delivered, providing water service to approximately 10,000 connections in five geographically separate areas.

CCWD has operated continuously since 1947, and is a political subdivision of the State of California. CCWD is not part of, or under the control of, the County of Calaveras.

CCWD includes all of Calaveras County in the Central Sierra Nevada foothills in the northeastern portion of the State of California. As a special

district, CCWD's powers include providing public water service, water supply development and planning, wastewater treatment, disposal, and recycling. CCWD has broad general powers over the use of water within its boundaries that include: the right of eminent domain; authority to acquire, control, distribute, store, spread, treat, purify, reclaim, process, and salvage water for beneficial use; providing wastewater service; selling treated or untreated water; acquiring or constructing hydroelectric facilities and selling the power and energy produced to public agencies or public utilities engaged in distributing power, and contracting with the United States or other political subdivisions, public subdivisions, public utilities, or other persons; and, subject to Article XIIIA of the Constitution of the State of California, levying taxes and improvements.

Calaveras County is a rural area with many small communities. In 1999, approximately 80 percent of the homes were single-family dwellings, 5 percent were multiple family dwellings, and 11 percent were mobile homes and trailers. In 1999, up to 66 percent of the homes in the county were occupied by full-time residents, while the remaining 34 percent were maintained as secondary or vacation homes. In 1997, California State Department of Finance (CSDF) reported the median household income for the county at $27,645, and the unemployment rate at 8.8%.

According to the US Census Bureau population reports, the estimated current (2000) population of Calaveras County is 40,554. This represents an increase of approximately 25 percent over the 1990 population of 32,350. There has been a steady rate of population growth in Calaveras County over the past decade. Based on a December 1998 report, the CSDF Demographic Research Unit estimates that the population for Calaveras County will show the following trend over the next two decades:

Table 1.4 Calaveras County Estimated Population Trends 2000 – 2020	
YEAR	ESTIMATED POPULATION
2000	41,000
2005	47,800
2010	53,400
2015	57,900
2020	62,200

Source: Department of Finance, "Interim County Pop."

This represents a population increase estimated to be about 9,000 to 11,000 additional residents every 10 years over the next two decades, or a 16 to 31 percent increase per decade.

1.5.7 Water Uses

The water usage's within the service areas of CCWD are primarily domestic and light commercial. There are no major industry or large agricultural demands provided by CCWD. The total water use for agriculture, which is used for irrigating orchards along the Calaveras River, averages 1,500 acre-feet per year.

1.5.8 Past Drought, Water Demand and Conservation Information

Small populations and the low usage per connection have allowed water supplies to satisfy demand even in periods of drought, such as the driest years of record, 1976/1977 and 1987 through 1994. Low usage per connection is a reflection of the geography and climate of each system. In general, extensive landscaping, which can account for up to 40 percent to 60 percent of a single-family connection usage, is not feasible in many of CCWD's systems. However, recent growth in certain systems will require existing policies to be reviewed and modified and/or new policies to be developed and implemented in order to conserve water supplies. For example, CCWD has required golf courses in the Copper Cove and Jenny Lind systems to use recycled wastewater for irrigation.

Section 2: WATER SUPPLY SOURCES

LAW:

Section 10631. A plan shall be adopted in accordance with this chapter and shall do all of the following
Section 10631 (b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments [to 20 years or as far as data is available.]

2.1 Water Supply Sources

Surface water is the source of supply for the five systems of CCWD. Three systems, Ebbetts Pass, Copper Cove and Jenny Lind, incorporate recycled wastewater for golf course irrigation. Map 2.1 shows the water supply sources and the systems.

2.2 Surface Water

CCWD holds numerous water rights for consumptive use on the various watercourses within Calaveras County. Table 2.1 summarizes the supply for each water system and the total water supply for CCWD. Each system and its associated water rights is then discussed in detail.

Table 2.1
Current and Projected Water Supply, Acre Feet

SYSTEM	2000	2005	2010	2015	2020
Ebbetts Pass/ Copper Cove	11,000	11,000	14,000	14,000	14,000
Jenny Lind	29,070	29,610	30,350	31,278	31,278
West Point	2,080	2,080	2,080	2,080	2,080
Sheep Ranch	262	262	262	262	262
Total Supply	42,412	42,952	46,692	47,620	47,620

2.2.1. Ebbetts Pass System and Copper Cove System

The North Fork of the Stanislaus River is the source of water for the Ebbetts Pass system and Copperopolis/Copper Cove system. A combination of direct diversions and storage rights from several water

Insert Map 2.1

permits provides the water supply for these systems. Table 2.2 is a summary of the current consumptive water rights that are available.

Together, these water rights allow 8,000 acre feet annually (afa) to be delivered to the Ebbetts Pass system and 6,000 afa to the Copper Cove system for consumptive use, for a total water supply of 14,000 afa. Under a separate agreement with the Northern California Power Agency (NCPA), 5,000 afa of the 8,000 afa for Ebbetts Pass can be currently diverted with the full 8,000 afa available to be diverted in 2009. Permit No. 15015 restricts the amount of direct diversion to 7 cubic feet per second (cfs) in the Ebbetts Pass area and to 10 cfs in the Copper Cove system during March 1 to July 1 of each year. Permit No. 14769 allows 3 cfs to be diverted all year round for use in Ebbetts Pass. Release from storage provides the water supply that is needed when direct diversions are insufficient and for supply during the other months of the year.

These water supplies, at the current rate of growth, are projected to be sufficient beyond 2020 for both improvement districts. Should demand increase faster than projected, additional water can be transferred from existing water rights to areas of need. Figure 2.1 is a schematic of the diversion points and flows to these systems.

Table 2.2
Ebbetts Pass/Copper Cove
Summary of CCWD Water Rights for Consumptive Use on the Stanislaus River

SOURCE	DIRECT DIVERSION, CFS	STORAGE AFA	POINT OF DIVERSION/STORAGE FACILITY	APPLICATION NO. (PERMIT NO.)	PERMITTED PLACE OF USE
Stanislaus River	10	-	Lake Tullock	A012910 (15015) [a,c]	Copper Cove System
North Fork Stanislaus	7[b] 3	-	McKays Point Dam, Utica Canal System	A012910 (15015) [b,c]	Ebbetts Pass System, Slurry Pipeline
North Fork Stanislaus	7	-	Ramsey	A012912 (15017) [b]	Ebbetts Pass System
North Fork Stanislaus	3	-	McKays Point Dam	A012912A (14769) [b]	Ebbetts Pass System
North Fork Stanislaus		37,000	Spicer Meadow Reservoir	A019149 (15024) [a, b]	Ebbetts Pass, Copper Cove System
North Fork Stanislaus		2,200	McKays Point Dam	A011792B (15013) [a, b]	Ebbetts Pass, Copper Cove System
North Fork Stanislaus		350	North Fork Diversion	A019149 (15024) [a]	Ebbetts Pass, Copper Cove System
Highland Creek		152,000	Spicer Meadow Reservoir	A011792B (15013) [a, b] A013091 (15018) [a,b] A019149 (15024) [a]	Ebbetts Pass, Copper Cove System
Total Supply, afa (EbbettsPass/CopperCove)					**14,000**

a – Total amount of water is limited for use within the Copper Cove system to **6,000** acre-feet per annum under these permits.
b – CCWD may divert or re-divert up to 7 cfs for use in the Ebbetts Pass and 3 cfs (limited to 1,000 afa) to the Utica System for delivery to the slurry pipeline. The total amount of water, from all permits, is limited to **8,000** afa for the Ebbetts Pass system under these permits. By separate agreement with the NCPA, only 5,000 afa is diverted until the year 2009.
C - Permit No. 15015 grants a diversion right of 65 cfs but currently allows only 20 cfs to be diverted from March to July.

Insert Figure 2.1

Tables 2.2 and 2.3 show the current and projected water supplies for Ebbetts Pass and Copper Cove.

Table 2.3 EBBETTS PASS Current and Projected Water Supplies, AF					
SOURCE	**2000**	**2005**	**2010**	**2015**	**2020**
Water Rights	5,000	5,000	8,000	8,000	8,000

Table 2.4 COPPER COVE Current and Projected Water Supplies, AF					
SOURCE	**2000**	**2005**	**2010**	**2015**	**2020**
Water Rights	6,000	6,000	6,000	6,000	6,000

2.2.2 Jenny Lind Improvement District

The water source for the Jenny Lind Improvement District is the New Hogan Reservoir owned by the United States Bureau of Reclamation (USBR). The Calaveras River drains into this reservoir. The USBR, Stockton East Water District (SEWD), and CCWD entered into an agreement to use water from New Hogan Reservoir. Table 2.4 shows CCWD's water allocation and delivery schedules. CCWD's total allocation of water is 30,928 acre-feet plus riparian water rights of 350 acre-feet.

Table 2.5 JENNY LIND Current and Projected Water Supplies, AF					
SOURCE	**2000**	**2005**	**2010**	**2015**	**2020**
USBR Contract, Agriculture	27,040	27,040	27,040	27,040	27,040
USBR Contract, M&I	1,680	2,220	2,960	3,888	3,888
Water Rights	350	350	350	350	350
TOTAL	29,070	29,610	30,350	31,278	31,278

2.2.3 Sheep Ranch Improvement District

White Pines Lake storage is the source of water for the Sheep Ranch system. CCWD claims pre-1914 storage rights of 262 acre-feet to be used for consumptive purposes.

Table 2.6
SHEEP RANCH
Current and Projected Water Supplies, AF

SOURCE	2000	2005	2010	2015	2020
Water Rights	262	262	262	262	262

2.2.4 West Point/Wilseyville Improvement District

There are two water supply sources for the West Point/Wilseyville system, Bear Creek and the Middle Fork of the Mokelumne River. CCWD has water rights for a year-round direct diversion of 4 cfs (not to exceed 1,830 acre feet), and 150 afa of storage rights on Bear Creek for a total potential supply of 1,980 afa. However, the natural flows of Bear Creek cannot support the 4 cfs during the summer and fall months. During these months, additional water, if needed for demand, is supplied from the Middle Fork of the Mokelumne River from the Calaveras County Public Utility District (CPUD). CCWD has an agreement with CPUD for 100 acre-feet annually from the Middle Fork. CCWD has also identified water projects that would increase supply to West Point. A draft water system improvement feasibility study funded by DWR was completed in May 2002.

Table 2.7
WEST POINT/WILSEYVILLE
Current and Projected Water Supplies, AF

SOURCE	2000	2005	2010	2015	2020
CPUD agreement	100	100	100	100	100
Water Rights	1,980	1,980	1,980	1,980	1,980
TOTAL	2,080	2,080	2,080	2,080	2,080

2.3 Groundwater

CCWD does not recognize groundwater as a reliable source because of the small and unpredictable yields of the fractured rock system that typifies the foothill geology. However, in the interest of advancing the management of water resources available to CCWD, an area west of the Jenny Lind system called the Camanche/Valley Springs Area, has been identified as a potential groundwater resource. On September 12, 2001, in response to Assembly Bill No. 3030 (AB 3030, Costa), CCWD adopted a Groundwater Management Plan (GMP) for the Camanche/Valley Springs Area. A copy of the GMP is included in this report as Appendix 3. In implementing the GMP, CCWD will investigate the opportunity to more efficiently manage its water resources for use in Calaveras County.

2.4 Recycled Water

CCWD utilizes recycled wastewater for the irrigation of three golf courses. A more detailed explanation of the application and CCWD's involvement with recycled water is provided in Section 8 of this report.

2.5 Water Quality

Watershed Sanitary Surveys of all three watersheds of CCWD's water supply sources have been conducted and are updated every five years in compliance with the California Department of Health Services Surface Water Treatment Regulations. The executive summaries of the latest surveys are in Appendix 9. The surveys include information relating to the water quality of the District's water supplies and management practices. CCWD has implemented management practices that protect the watershed of its drinking water sources. The surveys found that the watersheds are "pristine" – no organic constituents have ever been detected in previous tests. Changes to the water quality due to development activities of the three watersheds over the next five years are summarized in Appendix 6.

SECTION 3: RELIABILITY PLANNING

LAW:

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

10631 (c) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable and provide data for each of the following:
(1) An average water year
(2) A single dry water year
(3) Multiple dry water years.

10631 (d) For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to replace that source with alternative sources or water demand management measures, to the extent practicable.

10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:

10632 (b) An estimate of the minimum water supply available during each of the next three-water years based on the driest three-year historic sequence for the agency's water supply.

3.1 Reliability

CCWD's sole source of water supply is surface water, and has state permitted water rights and agreements to assure a long-term water supply. CCWD's surface water sources are vulnerable to seasonal and climatic shortage. Section 7 describes the drought periods and actions taken by the District during these periods. The District manages its water supply availability based on the "Safe Yield" concept, or as limited by contract and water rights, which ever is less.. The definition of safe yield is as follows:

> *"Safe Yield" is the maximum quantity of water that can continuously be made available from a water supply system without deficiency, each year, under hydrologic conditions similar to the most critical dry period(s) of record.*

The critical dry period could be a one-year climatic event or multiple dry years during which streamflows, in any given water year, were recorded to be the lowest. The safe yields of the rivers and other sources of CCWD's water supply were developed in the 1996 County Water Master Plan[1]. However, for the Ebbetts Pass and Copper Cove systems,

the safe yields of CCWD's water sources are greater than that which is currently allocated by the water rights. Therefore, CCWD reductions of surface water due to single or multiple dry years of record should will not impact CCWD's available water supply.

The water supply for the Jenny Lind system is governed by contract. Should the supply from New Hogan Reservoir be reduced, then the contract allocates to CCWD 7,700 acre-feet plus 350 acre-feet of riparian rights without deficiency for Municipal & Industrial (M&I) purposes. This amount is less than the safe yield of 23,800 acre-feet that has been allocated to CCWD under the service contract.[1]

The safe yields are shown in Table 3.1 and graphically on Figures 5.1 – 5.4, with the projected demands. The safe yields of CCWD's water supplies can meet the projected 20-year demand projections.

Table 3.1
Supply Reliability, Acre Feet/Year

SUPPLY SOURCE/SYSTEM	AVERAGE/ NORMAL WATER YEAR	SINGLE DRY WATER YEAR	WATER SOURCE SAFE YIELD	MULTIPLE DRY YEARS		
				YEAR 1	YEAR 2	YEAR 3
North Fork Stanislaus/ Ebbetts Pass, Copper Cove	14,000[1]	14,000[2]	20,200	14,000[2]	14,000[2]	14,000[2]
USBR Contract/ Jenny Lind	31,278	8,050[3]	23,800	8,050	8,050	8,050
White Pines Lake/ Sheep Ranch[4]	262	262	262	262	262	262
Bear Creek,CPUD/ West Point	2,080[5]	1,560	1,560	1,560	1,560	1,560
TOTAL SUPPLY	47,620	23,878	45,822	23,878	23,878	23,878

Notes
1. Includes seasonal direct diversions and storage water rights. See Table 2.1
2. Safe Yield is 20,200 afa. It is assumed that 15,000 afa is available without deficiency.
3. Contract amount for M&I purposes without deficiency
4. It is assumed that multiple dry years will have no impact due to the amount of lake storage.
5. Water rights and CPUD contract. Contract amount is without deficiency due to upstream storage.

[1] County Water Master Plan, rev. January 1996, prepared by Borcalli & Assoc., Inc. for the Calaveras County Water District

3.2 Frequency and Magnitude of Supply Deficiencies

CCWD has experienced periods when supplies were reduced. As described in Section 7, the District responds to these reductions by passing resolutions, specific to the service area, prohibiting certain uses of water. The earliest action of record taken by the District occurred in 1961 where the District declared a water shortage in the West Point and Copper Cove service areas. There are no records as to the amount of water supply reduction not the cause of the shortage. The Board passed an ordinance restricting certain water uses for that year. Since that time CCWD has obtained additional water rights, has successfully completed water supply projects, and has expanded facilities. These actions have increase the water supply and has allowed CCWD to satisfy demands, even in times of drought, by enacting only minimal conservation measures.

3.3 Plans to Assure a Reliable Water Supply

The amount of water from CCWD's water rights and associated sources assure a long-term water supply at a consistent level of use. CCWD has routinely evaluated water supply and has developed its resources to secure a reliable supply. For example, in 1989 CCWD completed construction of the North Fork Project, which is a multipurpose project that supplies water for power, environmental, and consumption purposes. This project and its associated water rights have assured a long-term water supply beyond the year 2020 planning horizon for the Ebbetts Pass and Copper Cove systems. Table 3.2 shows the estimated three-year minimum water supply available to each of the systems.

TABLE 3.2
Three Year Estimated Minimum Water Supply, afa

SYSTEM	YEAR 1	YEAR 2	YEAR 3
Ebbetts Pass, Copper Cove	14,000	14,000	14,000
Jenny Lind	8,050	8,050	8,050
Sheep Ranch	262	262	262
West Point	1,560	1,560	1,560
TOTAL	**23,872**	**23,872**	**23,872**

CCWD also recognizes that master planning is a key element in identifying long-term projects to assure water for the future. In 1996, the District developed a County Water Supply Master Plan. Many of the components of the Master Plan are included in the UWMP.

3.4 Water Supply Projects and Programs

No new water supply projects are necessary to meet the projected water use in this plan or to increase the amount available during average, single-dry, and multiple-dry water years for the next twenty years. However, CCWD is implementing an AB 3030 Groundwater Management Plan to develop potential groundwater supplies from conjunctive use of surface water supplies.

3.5 Transfer or Exchange Opportunities

LAW:

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

10631 (d) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

3.5.1 Short Term Transfers

CCWD has established and utilized short-term water transfer arrangements for a number of its water systems in order to address various water supply shortage contingencies.

If the primary (Stanislaus River) raw water source becomes unavailable for the Ebbetts Pass area, CCWD is able to purchase water from the Utica Power Authority from its Hunter Reservoir / Mill Creek source. Additionally, CCWD maintains interconnections with the Blue Lake Springs Mutual Water Company system, whose groundwater supply permits augmentation of CCWD water supplies when surface water sources are inadequate. These interconnections also allow CCWD to assist Blue Lake Springs during fire emergencies.

If the primary (San Antonio Creek) raw water source becomes unavailable for the small Sheep Ranch area, CCWD is able to have potable water trucked in from the Ebbetts Pass area.

When the primary (Bear Creek) raw water source is inadequate for the West Point area, CCWD is able to purchase water from the Calaveras Public Utility District from its Schaads Reservoir / Middle Fork Mokelumne source. This has been done primarily in dry years.

In the Jenny Lind area, CCWD maintains an interconnection with the Valley Springs Public Utility District for mutual aid. Valley Springs is on a groundwater source with the potential to assist CCWD should the water supply from the New Hogan Reservoir / Calaveras River source prove inadequate. Conversely, CCWD is able to assist Valley Springs in fire emergencies.

3.5.2 Long Term Transfers

CCWD continues to explore a number of opportunities for long-term water transfers. Grant monies have been received and continue to be applied for in assisting CCWD with its program of evaluating the potential for water transfer or conjunctive use projects with other service providers.

SECTION 4: WATER USE PROVISIONS

LAW:

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

10631 (e) (1) Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors including, but not necessarily limited to, all of the following uses:

(A) Single-family residential; (B) Multifamily; (C) Commercial; (D) Industrial; (E) Institutional and governmental; (F) Landscape; (G) Sales to other agencies; (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof; and (I) Agricultural.

(2) The water use projections shall be in the same 5-year increments to 20 years or as far as data is available.

4.1 Past, Current, and Projected Water Use

CCWD has compiled fifteen years of water production data for each of the systems. However, this data does not itemize customer class (sectors). The need to track water use by sector has not been critical to the District due mainly to the relatively small volume of water used among the various sectors other than residential. There are no existing or projected large commercial, industrial, or agricultural accounts that would significantly impact CCWD's management and forecasts of its water supplies. Also, CCWD bills all customers at the same base rate, regardless of use. Table 4.2 shows the past, current, and projected total water use for each system.

CCWD's agricultural accounts total approximately 1,500 acre-feet per year. These accounts are in the Jenny Lind service area. Three hundred acre feet is used to supplement the irrigation of a golf course when recycled water does not meet the demands. The remaining 1,300 acre-feet is used for orchards along the Calaveras River water shed.

CCWD also acts as a wholesale finished water purveyor to two small providers in the Ebbetts Pass area: Fly In Acres Water Company and Snowshoe Springs Mutual. The water use for these small communities is residential. The water supplied to these customers is conveyed through the Ebbetts Pass system. The total amount of water consumed by both communities is approximately 81 acre-feet per year. This amount of water is not anticipated to increase in the future as these communities are nearly built-out.

The water use per connection varies throughout the District and is reflective of the demographics of each system. Table 4.1 summarizes the unit water use per connection averaged over the fifteen years of record.

Table 4.1
Unit Consumption

SYSTEM	AVERAGE ANNUAL ACRE-FEET/CONNECTION
Ebbetts Pass	0.31
Copper Cove	0.70
Jenny Lind	0.53
West Point	0.38
Sheep Ranch	0.36

New connections are added at a rate from 2% to 7%, depending on the system. The higher growth rates are in the Copper Cove (7%) and Jenny Lind systems (7%). Development rate in the Copper Cove system is anticipated to increase, as there are several Developer Specific Plans that are currently under consideration by the County. The other systems were projected to grow at a linear rate based on the fifteen-year historical record.

Table 4.2 Number of Connections								
SYSTEM	YEAR							
	1985	1990	1995	2000	2005	2010	2015	2020
Ebbetts Pass	3,355	4,287	4,722	5,066	5,997	6,719	7,445	8,168
Copper Cove	553	9,56	1,243	1,503	2,603	5,136	7,337	8,341
Jenny Lind	907	1,710	2,096	2,547	3,453	4,149	4,845	5,543
West Point	315	426	463	519	571	634	697	760
Sheep Ranch	43	40	39	43	50	67	60	67
Total	5173	7,419	8,563	9,678	12,674	16,705	20,384	22,879

Table 4.3 Past, Current, and Projected Water Use, af								
System	1985	1990	1995	2000	2005	2010	2015	2020
Ebbetts Pass	970	1,157	1,482	1,584	1,859	2,083	2,308	2,532
Snowshoe	na	na	na	50	50	50	50	50
Fly-in Acres	na	na	na	31	31	31	31	31
Total	970	1,157	1,482	1,665	1,940	2,164	2,389	2,613
Copper Cove	191	371	580	961	1,822	3,595	5,136	5,839
Jenny Lind	411	853	1,283	1,461	1,830	2,199	2,568	2,938
Agriculture	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500
Total	1,911	2,353	2,783	2,961	3,330	3,699	4,068	4,438
West Point	117	170	169	189	217	241	265	289
Sheep Ranch	15	20	15	13	14	16	17	19
TOTAL	3,204	4,071	5,029	5,789	7,323	9,715	11,875	13,198

SECTION 5: SUPPLY AND DEMAND COMPARISON

LAW:

10635 (a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from the state, regional, or local agency population projections within the service area of the urban water supplier.

5.1 Supply and Demand Comparison

Tables 5.1 and 5.2 summarize CCWD's total supply and demand through 2020 for the various hydrologic scenarios.

Table 5.1
Total District
Projected Supply and Demand Comparison, Acre-feet/Year

	2000	2005	2010	2015	2020
Supply totals	42,412	42,952	46,692	47,620	47,620
Demand totals	5,789	7,323	9,715	11,875	13,198
Difference	36,623	35,629	36,977	35,745	34,422

Table 5.2
Total District
Supply Reliability and Demand Comparison, 2020, Acre-feet/Year

			Multiple Dry Water Years		
	Average/ Normal Water Year	Single Dry Water Year	Year 1	Year 2	Year 3
Supply totals	47,620	23,878	23,878	23,878	23,878
Demand totals	13,198	13,198	13,198	13,198	13,198
Difference	34,422	10,680	10,680	10,680	10,680

The following tables compare CCWD's current water supply sources to the projected water demand over the next 20 years in five-year increments for each system. Two supply and demand comparison scenarios are presented; 1) comparison of supply and demand for each water system, and 2) supply and demand comparison considering the multiple users of the river systems.

5.2 Supply and Demand Comparison – Water Systems

The supply total in the tables is that amount permitted by CCWD's water rights for the various river systems. The supplies shown are those that would be available during normal water years.

Table 5.3
Ebbetts Pass
Projected Supply and Demand Comparison, af

YEAR	2000	2005	2010	2015	2020
Supply	5,000	5,000	8,000	8,000	8,000
Demand	1,665	1,940	2,164	2,389	2,613
Difference	**3,335**	**3,060**	**5,836**	**5,611**	**5,387**

Table 5.4
Copper Cove
Projected Supply and Demand Comparison, af

YEAR	2000	2005	2010	2015	2020
Supply	6,000	6,000	6,000	6,000	6,000
Demand	961	1,822	3,595	5,136	5,839
Difference	**5,039**	**4,178**	**2,405**	**864**	**161**

Table 5.5 Jenny Lind Projected Supply and Demand Comparison, af					
YEAR	2000	2005	2010	2015	2020
Supply [1]	29,070	29,610	30,350	31,278	31,278
Demand	2,961	3,330	3,694	4,068	4,438
Difference	**26,109**	**26,280**	**26,656**	**27,210**	**26,840**

[1] M&I and AG

Table 5.6 West Point Projected Supply and Demand Comparison, af					
YEAR	2000	2005	2010	2015	2020
Supply	2,080	2,080	2,080	2,080	2,080
Demand	189	217	241	265	289
Difference	1,891	1,863	1,839	1,815	1,791

Table 5.7 Sheep Ranch Projected Supply and Demand Comparison, af					
YEAR	2000	2005	2010	2015	2020
Supply	262	262	262	262	262
Demand	13	14	16	17	19
Difference	249	248	246	245	243

5.3 Supply and Demand Comparison – River Systems

In addition to CCWD, other entities in Calaveras County have water rights on the North Fork Stanislaus River, which may impact the water supply for the Ebbetts Pass and Copper Cove systems. As such, a comparison of supplies and demands are shown in the following tables for Ebbetts Pass and Copper Cove. The demands are based on a high range population projection from the 1996 County Water Master Plan and potential

consumptive uses within the county for Stanislaus River water. It is recognized that there are other users outside of the county that also have claims to this supply. These outside county claims are not included in the demands. The following tables show the projected demands of all users, including CCWD, compared to the system safe yield as representing the available supply.

Table 5.8
Projected Supply and Demand Comparison, af
North Fork Stanislaus River System
System: Ebbetts Pass

	2000	2005	2010	2015	2020
Demand					
Union Public Utility District	1,240	1.348	1,455	1,563	1,670
City of Angels	1,140	1,400	1,655	1,912	2,170
Agricultural Interests	2,000	3,937	5,875	7,812	9,750
Ebbetts Pass	1,665	1,940	2,164	2,389	2,613
Total Demand	**6,045**	**8,544**	**11,149**	**13,676**	**16,203**
Supply					
North Fork System Safe Yield	**17,200**	**17,200**	**20,200**	**20,200**	**20,200**

Table 5.9
Projected Supply and Demand Comparison, af
Stanislaus River System
System: Copper Cove

	2005	2010	2015	2020
DEMAND				
UNION PUBLIC UTILITY DISTRICT	1,348	1,455	1,563	1,670
CITY OF ANGELS	1,400	1,655	1,912	2,170
AGRICULTURAL INTERSTS	3,937	5,875	7,812	9,750
EBBETTS PASS	1,859	2,083	2,308	2,532
COPPER COVE	1,822	3,595	5,136	5,839
TOTAL	10,366	14,663	18,731	21,961
SUPPLY				
NORTH FORK SYSTEM SAFE YIELD	37,200	40,200	40,200	40,200

5.4 Summary

Figures 1-4 graphically show available supply during the driest period of record (safe yield) with the projected demands for the Ebbetts Pass, Copper Cove, Jenny Lind, and the West Point water systems. CCWD's water supplies can provide for the 20-year growth projections for each water system. The figures for Ebbetts Pass and Copper Cove systems show a combined high range demand projection of all the Calaveras County users of the Stanislaus River. The figure for the Jenny Lind system shows only the contractual allocations given to CCWD from New Hogan Reservoir, even though Stockton East Water District also has an allocation from the reservoir. For West Point, there are no other entities that use Bear Creek as a water supply source; therefore only the demands of the West Point system are shown.

Insert Figure 5.1

Insert Figure 5.2

Insert Figure 5.3

Insert Figure 5.4

SECTION 6: WATER DEMAND MANAGEMENT MEASURES

LAW:

> 10631 (f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:
> (1) A description of each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following……...

Encouraging the implementation of water conservation programs in the service community is part of CCWD's steadfast commitment to the efficient use of the water supply. This section addresses CCWD's current plan for implementation of the 14 Water Demand Management Measures specified in the UWMP Act.

Each of the measures is discussed herein to identify the potential that they offer for meeting water needs in CCWD's water systems.

Water Demand Management Measures

DMM 1 - Water Survey Programs

DMM 2 – Residential Plumbing Retrofit

DMM 3 – System Water Audits, Leak Detection and Repair

DMM 4 – Metering with Commodity Rates

DMM 5 – Large Landscape Conservation Programs

DMM 6 – High-Efficiency Washing Machine Rebate Programs

DMM 7 – Public Information Programs

DMM 8 – School Education Programs

DMM 9 – Conservation Programs for Commercial, Industrial and Institutional Accounts

DMM 10 – Wholesale Agency Programs

DMM 11 – Conservation Pricing

DMM 12 – Water Conservation Coordinator

DMM 13 – Water Waste Prohibition

DMM 14 – Residential Ultra-Low Flush Toilet Replacement Programs

DMM 1 – Water Survey Programs

CCWD's customer service staff performs regular monthly analyses of meter reading data via electronic reporting, using 3-5 years of historical data. This procedure allows detection of leaks through seasonal usage comparisons. Customers with meters showing unusually high usage in any given billing period are contacted to discuss excessive use and/or alert them to the possibility of a water leak. If requested, a field service representative will visit the customer to perform a water usage analysis/investigation for the customer at no cost. In addition, CCWD's field service personnel routinely respond to customer complaints and unusual circumstances involving high water usage.

DMM 2 – Residential Plumbing Retrofit

A substantial portion of CCWD's water systems contain residences built after 1992. CCWD promotes water conservation by offering "Living Wise" water conservation kits free of charge to customers dwelling in residences constructed prior to 1992. The Energy Saving Certified Appliances kit contains a low flow showerhead, low flow kitchen sink swivel nozzle, a bathroom faucet hot water saver fixture, a hot water temperature indicator gauge and a water use/energy cost calculation card and guide. A toll-free help line number is provided in the kit as well. Customers attending CCWD public meetings, groundbreakings and dedications (held regularly throughout the year), whose residences were built prior to 1992, are encouraged to take and utilize the kit after a demonstration of its features. Conservation kits are also available at CCWD's District Office upon request. A list of customers who have received conservation kits has been maintained. It is the District's plan to contact these customers after approximately one year of use to determine the effectiveness of this program.

DMM 3 – System Water Audits, Leak Detection and Repair

CCWD operations staff performs regular inspection and maintenance of water distribution systems in order to detect and repair leaks. Treated water data is recorded on a monthly basis. CCWD meters all water systems, making records available for water system audits. As of this date, an audit process to analyze water loss within the distribution system and assist in leak detection is in the planning stage, and the district plans to implement such a process in the near future. CCWD's customer service staff performs regular monthly

analyses of meter reading data via electronic reporting, allowing detection of leaks through seasonal usage comparisons. Customers are contacted if a leak is suspected. If requested, a water usage analysis is conducted for the customer at no cost.

DDM 4 – Metering with Commodity Rates

All permanent and temporary connections are metered. CCWD bills bi-monthly using standardized, district-wide base rates and hundred-cubic-foot volume charges. CCWD's monthly billing rate includes a base rate for usage from zero to 300 hundred cubic feet (the minimum). Customers using water in excess of 300 cubic feet per month are charged at a rate of $0.85 per 100 cubic feet above the minimum.

DMM 5 – Large Landscape Conservation Programs

CCWD recommends that each commercial customer install a dedicated irrigation meter. Upon application for service, customer service staff demonstrates to the commercial customer the advantage of a dedicated irrigation meter by explaining CCWD's water usage review policy, which requires that commercial customers' water use be evaluated every other year to determine chargeable wastewater equivalency units. Customers with mixed-use meters will find their equivalency rate higher if irrigation usage is included in the computation. Thus, customers with a dedicated irrigation meter have the advantage of a lower chargeable wastewater equivalency along with separate irrigation data, ultimately encouraging the customer to conserve water. In addition, CCWD recommends drought tolerant native plants and reduced area turf planting to all residential and commercial customers and reminds customers via billing statement messages, billing inserts and customer newsletter articles to inspect and repair all landscape irrigation systems regularly.

DMM 6 – High-Efficiency Washing Machine Rebate Programs

Exemption claimed due to CCWD's limited resources. At this writing, CCWD does not offer a high-efficiency washing machine rebate program. While no numbers are available for a cost benefit analysis at this time, CCWD submits that the loss of revenue, which would apply to fixed costs, would be a financial hardship for the district. In CCWD's rural service area, there are fewer customers per service area (as compared to larger, more urban districts) to absorb the costs of implementing a program of this type. In addition, there are no "down-the-line" customers to pick up lost usage. While gaining water supply may

constitute an overall benefit to another purveyor by diverting supply to other customers or making supply available for sale, in CCWD's current situation, implementing this DMM would simply mean a loss of revenue. Recently, CCWD has found it necessary to institute substantial rate increases to insure availability of funds for future replacement of infrastructure. Use of rate increase generated funds to subsidize the rebate program suggested in this DMM would not be justifiable in today's climate.

DMM 7 – Public Information Programs

CCWD believes that water conservation education and water awareness in Calaveras County, California and the nation is vital to maintaining our water supply and meeting our growing water needs. Disseminating educational materials to the public is an integral part of CCWD's commitment to water conservation. CCWD regularly works with the public and other agencies to educate the community about the importance of the preservation of our water resources for all generations.

- In 1999, via a grant from the California State Water Resources Control Board (SWRCB), CCWD and Stockton East Water District (SEWD) formed a technical advisory committee and an extensive public stakeholders group to begin the process of developing the Calaveras River Watershed Management Plan (CRWMP). Phase I of the plan was made available for public review in draft form in 2000 and has since been approved by the SWRCB. The plan is currently available at the Calaveras County Public Library and on the Internet. At the close of Phase I, three 5' x 3' "storyboard" displays depicting the process of the CRWMP were created for use as public outreach and educational tools. Representations of the displays are included as Appendix 4. Phase II of the plan, Baseline Water Quality Monitoring on the Calaveras River, has been funded by a grant through CALFED and is in the initial stages of implementation. As part of the public education process, CCWD participated with other agencies, including SEWD, USFWS and DWR, in a public informational meeting in August 2001 to introduce fishery related studies being conducted on the Calaveras River and Mormon Slough. CRWMP stakeholders attended the meeting and participated in the study plan. Regular stakeholders meetings for the CRWMP will resume this fall.
- Comprehensive water conservation brochures and handouts are available, along with water conservation kits, at CCWD's public informational meetings, dedications and

groundbreaking ceremonies. Samples are provided as Appendix 5. Copies of brochures, handouts and conservation kits may be obtained by request from the district office.

- CCWD maintains a continuously updated web site (www.ccwd.org), featuring conservation tips, FAQs, general information, and links to local, state and federal agencies and the CRWMP.
- WaterFront, CCWD's customer newsletter, is issued periodically and provides a forum for dissemination of water conservation tips and information. Waterfront features articles aimed at educating customers in higher elevations, many of them seasonal residents, on system winterization techniques designed to prevent line breakage and leaks that could result in major water loss and property damage.
- Every year, in order to heighten public awareness of the need for water conservation, CCWD prepares a display for the Calaveras County Jumping Frog Jubilee and County Fair featuring winning poster contest entries from CCWD's annual "Be A Water Saver" poster contest for third grade students. CCWD has also participated in Calaveras County's Home and Garden Show by distributing water conservation kits and brochures. Our display at the Home and Garden Show also featured a xeriscape gardening display.

DMM 8 – School Education Programs

CCWD is convinced that one of the best methods of educating the general public in the wise use of our water is achieved through educating our students. Every year, in January, CCWD conducts a water awareness program in the third grade classrooms of each of Calaveras County's ten elementary schools. The in-class presentation is approximately 50 minutes in length and includes a video, demonstrations, charts, worksheets, work booklets and student participation, all of which provide information on water systems, water quality, the water cycle and the importance of water conservation. In addition, water conservation materials are provided for students to take home and share with their families. This program is followed by CCWD's annual "Be A Water Saver" poster contest for all water awareness program participants. CCWD has also conducted Adopt-A-Watershed field trips in conjunction with local school science programs, and has recently been funded through a United States Environmental Protection Agency (USEPA) Educational Grant to

expand and continue this program in 2003. CCWD's community and school programs have received in-kind donations from local merchants and coverage in local newspapers. Facility tours are available to the public at dedication events and upon request.

DMM 9 – Conservation Programs for Commercial, Industrial and Institutional Accounts

CCWD routinely reviews in detail all plans for new commercial, industrial, and institutional customers. Upon commercial customers' request, staff will perform an on-site water audit free of charge to determine connection fees and estimate usage. Incentives for water conservation for the commercial customer are communicated by explaining CCWD's water usage review policy, which requires that commercial customers' water use be evaluated every other year to determine chargeable wastewater equivalency units. Commercial customers, particularly high demand water users such as laundromats and car washes, are encouraged to install water saving and water recycling equipment to reduce their water use, thereby reducing their water waste equivalency rates. All commercial customers are encouraged to install a dedicated irrigation meter (see DMM 5). CCWD beneficially reuses recycled water to irrigate golf course fairways and greens, thereby reducing the use of raw water while disposing of treated effluent.

DMM 10 – Wholesale Agency Programs

CCWD acts as a wholesale finished water purveyor to two small providers in the Ebbetts Pass area: Fly In Acres Water Company and Snowshoe Springs Mutual. Combined, these subdivisions serve a total of approximately 500 connections. CCWD makes water conservation brochures, conservation kits, and copies of our annual Consumer Confidence Report available to these providers for distribution to their customers.

DMM 11 – Conservation Pricing

CCWD uses a tiered rate structure for water service rates, effectively promoting water conservation. Conservation conscious customers will save money by using the least amount of water possible. CCWD's monthly billing rate includes no volume charge for from zero to three hundred cubic feet, (the minimum); hence, a customer using up to 300 cubic feet of water per month is charged only the standard base rate. Customers using

water in excess of 300 cubic feet per month are charged at a rate of $0.85 per 100 cubic feet above the minimum.

DMM 12 – Water Conservation Coordinator

CCWD has designated an employee as Water Conservation Coordinator for the District. The water conservation coordinator's duties include:

- Supervising and conducting public outreach
- Administering and coordinating public meetings
- Public information dissemination
- Public outreach advertising, media contact
- Customer newsletter production
- Coordinating and implementing public and school education programs
- Distributing and tracking water conservation kits
- Management of conservation information displayed on CCWD's web site
- Production oversight of CCWD's annual Consumer Confidence Report
- Oversight, compilation and update of the UWMP
- Coordination and administration of the CRWMP
- Other duties relating to CCWD's commitment to water conservation

DMM13 – Water Waste Prohibition

Article II, Section 16 of the Calaveras County Water District Board Policy states: *Consumer's Negligence or Wasteful Use of Water*

Where negligent or wasteful use of water exists on a customer's premises, seriously affecting the general service, the District may discontinue the service if such conditions are not corrected within five (5) days after giving customer written notice of intent to do so.

DMM14 – Residential Ultra-Low-Flush Toilet (ULFT) Replacement Programs

Exemption claimed due to CCWD's limited resources. At this writing, CCWD does not offer a residential ULFT replacement rebate program. While no numbers are available for a cost benefit analysis at this time, CCWD submits that the loss of revenue, which would apply to fixed costs, would be a financial hardship for the district. In CCWD's rural service area, there are fewer customers per service area (as compared to larger, more urban districts)

to absorb the costs of implementing a program of this type. In addition, there are no "down-the-line" customers to pick up lost usage. While gaining water supply may constitute an overall benefit to another purveyor by diverting supply to other customers or making supply available for sale, in CCWD's current situation, implementing this DMM would simply mean a loss of revenue. Recently, CCWD has found it necessary to institute substantial rate increases to insure availability of funds for future replacement of infrastructure. Use of rate increase generated funds to subsidize the rebate program suggested in this DMM would not be justifiable in today's climate.

However, there may be some cost benefit in the reduction in wastewater treatment. For this reason, CCWD plans to review the cost-effectiveness of implementing a residential ultra-low-flush toilet replacement program. Should the District determine this program would institute cost savings by reducing wastewater treatment, an application for funding through the Water Use Efficiency Grant Program will be prepared and submitted in response to the next PSP.

SECTION 7: WATER SHORTAGE CONTINGENCY PLAN

LAW:

10632. The plan shall provide an urban water shortage contingency analysis, which includes each of the following elements, which are within the authority of the urban water supplier:

7.1 Response to Water Shortage Conditions

LAW:

10632(a) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage.

7.1.1 Water Shortages and Triggering Mechanisms

Drought Response History – 1976-1977

During the 76-77 drought, CCWD saw the need to restrict water use in its Copperopolis and Ebbetts Pass service areas. Records do not indicate the amount of reduction to the water supply during this time. As part of the District's actions to address the water supply shortage, Ordinance 77-1 was adopted (Appendix 9). This ordinance constituted a generic water shortage response plan that was specifically applied to the two areas impacted through a Board declaration (Resolution 2160).

Drought Response History – 1987-1994

During this drought period, the two areas impacted by the previous drought were unaffected due to the development of additional water storage at New Melones Reservoir, completed in 1979, and New Spicer Meadow Reservoir, completed in 1990. Although water storage at New Hogan Reservoir, the contract source of supply for the Jenny Lind service area, was greatly diminished and water quality less than desirable, voluntary conservation was adequate and near normal consumption patterns were maintained. Due to construction of an intertie linking the community of West Point with other subservice areas and an agreement for purchasing supplemental water with Calaveras Public Utility District, the Middle Fork of the Mokelumne River was periodically used as a backup for the primary

water source at Bear Creek. In the small community of Sheep Ranch (45 connections), the normal San Antonio Creek water source was supplemented by releases from the Ebbetts Pass water system. Due to the relatively small number of connections within CCWD's scattered service areas and adequate raw water storage and diversion rights, the District was able to address this multi dry year scenario through voluntary conservation on the part of its customers.

It is understood that the Urban Water Management Planning Act requires a planned response with stages of action to be taken during a water shortage. CCWD has developed a four-stage plan for responding to water shortages. The plan includes voluntary and mandatory rationing, depending on the causes, severity and anticipated duration of the water supply emergency.

7.1.2 Water Shortage Determination and Response

In the event of projected water supply shortages or protracted delivery limitations in the CCWD's water system that may detrimentally impact the District's customers for an extended period, the General Manager will consult with the Board of Directors and may request that the Board declare a water shortage emergency in accordance with the provisions of Water Code Section 350.

The Board of Directors, upon determination that critical conditions exist, will hold a public hearing on the declaration of a water shortage emergency in accordance with the provisions of Water Code Sections 351, 352, and 31028.

Upon determining and declaring a water shortage emergency, the Board shall, in accordance with Water Code Sections 353,31027 and 31028, adopt such regulations and restrictions as are appropriate to conserve the available water resource. The Board will, as part of the adoption of regulations and restrictions, direct the General Manager to implement the appropriate stage of the Water Conservation Program as delineated in the table below to protect the public health, safety, and welfare.

Table 7.1 Water Conservation Stages and Reduction Goals			
SHORTAGE CONDITION	**STAGE**	**CUSTOMER REDUCTION GOAL**	**TYPE OF CONSERVATION PROGRAM**
None	I	0%	Normal Operation
0 – 20%	II	20%	Voluntary
20 – 35%	III	35%	Mandatory
35 – 50%	IV	50%	Mandatory

Short-Term Duration (1-10 days)

When short-term deficiencies in the District's distribution system limit supply capabilities, such as system outage due to the failure or damage of major water system components, the General Manager is authorized to implement such constraints on the use of water as are appropriate to the cause, severity and anticipated duration of the short-term water supply emergency.

Per Water Code Section 351, the Board declaration and public hearing process is not applicable to system failures that cause immediate emergencies.

7.1.3 Water Shortage Triggering Mechanisms (>10 days)

System-wide - If deficiencies in CCWD's distribution system limit supply capabilities for longer than 10 days for reasons such as a system outage due to the failure or damage of major water system components, the General Manager will inform the Board of Directors of the circumstances and make recommendation whether to suspend or extend existing conservation restrictions or to implement new restrictions appropriate to the situation.

Ebbetts Pass – This area derives water by direct diversion of natural flows from the North Fork Stanislaus River and by re-diversion of stored water from New Spicer Reservoir, a CCWD facility operated by the Northern California Power Agency (NCPA). Should peak storage in New Spicer Reservoir reach 50% or less of its total 189,000 AF capacity, CCWD staff will consult with NCPA staff to determine whether there will be cause for any potential reductions in raw water delivery to

Ebbetts Pass. The anticipated percentage reduction in supply will be brought to the Board of Directors with a recommendation regarding the need for a declaration of a water shortage emergency as outlined above under Water Shortage Determination.

Copper Cove – This area derives water by direct diversion of natural flows from the North Fork Stanislaus River and by re-diversion of stored water from New Spicer Reservoir. Additionally, water for diversion must pass through New Melones Reservoir (a BOR facility) and into Lake Tulloch (a Tri-Dam facility) before CCWD can access its water. Should peak storage in New Spicer Reservoir reach 50% or less of its total 189,000 AF capacity, CCWD staff will consult with NCPA staff to determine whether there will be cause for any potential reductions in raw water delivery. Additionally, CCWD will consult with Tri-Dam staff regarding projected levels in Lake Tulloch. Should either consultation result in a projected reduction in the raw water supply for Copper Cove, the anticipated percentage reduction in supply will be brought to the Board of Directors with a recommendation regarding the need for a declaration of a water shortage emergency as outlined above under Water Shortage Determination.

Jenny Lind – Per contract, the New Hogan Reservoir water master will notify CCWD in May of any deficiencies in the delivery of scheduled water from the lake. Should there be such a notice of a reduction in delivery, the anticipated percentage reduction in supply will be brought to the Board of Directors with a recommendation regarding the need for a declaration of a water shortage emergency as outlined above under Water Shortage Determination.

West Point – West Point is primarily dependent upon water from its Bear Creek diversion and Regulating Reservoir. A supplemental supply is available through purchase from Calaveras Public Utility District's (CPUD) Middle Fork Mokelumne River source. If in the opinion of the CCWD Operations Superintendent, it appears that pumping from the Middle Fork will become necessary at any time subsequent to August 1, CCWD Staff will consult with CPUD staff to determine whether there will be any reduction in the supplemental supply. Should there be a determination of a reduction in delivery, the anticipated percentage reduction in supply will be

brought to the Board of Directors with a recommendation regarding the need for a declaration of a water shortage emergency as outlined above under Water Shortage Determination.

Sheep Ranch – This very small community is supplied by water flowing in San Antonio Creek and storage at White Pines Lake. If, in the opinion of the CCWD Operations Superintendent, it appears that White Pines Lake will go dry, the Operations Superintendent will so inform the General Manager and make preliminary preparations for trucking potable water to Sheep Ranch. If it appears that trucking water will in fact become necessary, the General Manager will so inform the Board of Directors and recommend that a Stage IV conservation program be implemented until trucking is suspended. The Board will consider this recommendation and decide whether to declare a water shortage emergency as outlined above under Water Shortage Determination.

7.1.4 Three Year Minimum Water Supply Estimate

LAW:

10632 (b) Estimate of minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.

Refer to Section 3, Table 3.2 (Page 30) for this information.

7.2 Water Shortage Emergency Response

LAW:

10632 (c) Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.

Although CCWD customers have realized minimal impact from prior droughts and CCWD water supply entitlements are adequate to meet water needs for several years, CCWD's Board of Directors has the authority under Water Code Sections 31026-31029 to enact emergency measures in response to disasters.

As part of CCWD's continuing master planning effort, service reliability and water shortage contingency planning issues will be further addressed. A number of actions have been taken and measures put into place to address water shortage emergencies.

7.2.1 Local Agency Coordination

CCWD participates in Calaveras County's Multi-Agency Coordinating (MAC) Group. During emergencies that impact community water supplies, the MAC affords CCWD the opportunity to work directly with state and local agency representatives (including County OES) that can offer resources and assistance. The MAC and CCWD also maintain close ties to a number of local media representatives to facilitate communication in an emergency.

7.2.2 Power Interruption (all systems)

Whether by fire, snowstorm or rolling blackout, CCWD's systems have witnessed numerous occasions in which power has been interrupted. In response, CCWD has purchased stationary and portable generators to maintain at least a minimum level of water delivery. Stationary units automatically start upon power interruption.

Conservation Required – the level of conservation effort would largely depend on the time of year, corresponding customer usage and the projected length of the outage. CCWD has a public notification plan to alert customers to the appropriate level of conservation requirements through local radio and print media as well as posting notices in public places. Conservation may include voluntary or mandatory reductions in indoor and / or outdoor water use.

7.2.3 Raw Water Interruption

A number of established contingency measures were presented in Section 3.4 "Transfer or Exchange Opportunities." These address dry year scenarios as well as catastrophic interruption of supply and are summarized below. Events that have triggered previous emergencies include landslide and heavy rains that have rendered the primary water source untreatable for a period of time.

Ebbetts Pass - If the primary (Stanislaus River) raw water source becomes unavailable for the Ebbetts Pass area:

1) Purchase raw water from the Utica Power Authority's Hunter Reservoir / Mill Creek source.

2) Purchase treated water from Blue Lake Springs Mutual Water Company system through system interconnections.

Sheep Ranch - If the primary (San Antonio Creek) raw water source becomes unavailable for the Sheep Ranch area:

1) Contract with Jack Horner of Mt. Ranch or others to truck potable water in from the Ebbetts Pass area. "Backfeed" into the Sheep Ranch distribution system.

2) Release potable water from Ebbetts Pass system down San Antonio Creek to feed the Sheep Ranch diversion.

West Point - If the primary (Bear Creek) raw water source is unavailable for the West Point / Wilseyville area:

1) Purchase raw water from the Calaveras Public Utility District Schaads Reservoir / Middle Fork Mokelumne source.

Jenny Lind – If the primary (Calaveras River) raw water source becomes unavailable for the Jenny Lind area:

1) Purchase treated water from Valley Springs Public Utility District through the system interconnection.

Conservation Required – Backup water supplies are not adequate to provide water at typical rates of usage in all areas and conservation may be required. After evaluating the impact of the emergency and the adequacy of the backup supply, the conservation response is similar to that under Power Interruption.

7.2.4 Mandatory Prohibitions on Water Wasting

LAW:

10632 (d) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.

The following is a list of some of the prohibitions on various wasteful water uses to be implemented during a Stage IV water shortage:

- Use of potable water for cleaning driveways, walkways, parking lots and streets
- Washing of cars, boats, trailer, etc.
- Watering lawns and landscapes
- Refilling of decorative fountains, ponds and recreational pools
- Gutter flooding
- Dust control
- Unattended watering

7.2.5 Water Conservation Program

LAW:

10632 (e) Consumption reduction methods in the most restrictive stages.

Recent Water Conservation Experience

The September 2001 fire knocked out the water supply to Murphys and Angels Camp. An emergency supply allowed approximately 50% of normal use. Two actions were taken by the local utilities to reduce water consumption: Outdoor watering was suspended and customers were requested to keep indoor use to minimum needs. The customers responded quickly with a dramatic 50% drop in use.

Program Stages

The following programs will be selectively applied either by the General Manager (in short-term instances) or by Board declaration (for long-term instances) to the appropriate CCWD service area(s) depending upon the cause, severity and anticipated duration of the term of the water supply shortage.

Stage I – Normal Operation (Voluntary)

1. Continue to encourage all customers to conserve water.
2. Continue to operate and maintain the water system in an efficient and economical manner.

Stage II – 20% Shortage (Voluntary)

1. Strongly encourage customers to conserve water through the use of local media, billing statements and direct mail.
2. Discourage use of water for cleaning driveways, walkways, parking lots and streets.
3. Request that landscape watering is avoided from 10 am to 6 pm.
4. Discontinue non-essential flushing of mains and hydrants.

Stage III – 35% Shortage (Mandatory)

1. Continue public outreach to convey water shortage information and measures to be taken by residents and business owners to reduce indoor use.
2. Use of water for cleaning hardscape is prohibited.
3. All irrigation is prohibited between the hours of 10 am and 6 pm.
4. Line flushing will be discontinued.
5. Use of water in decorative fountains and recreational ponds shall be the minimum to preserve aquatic life if present. Filling of new or existing pools is prohibited.
6. Residential landscape irrigation will be on an “odd / even” watering program.

7. Water for irrigation of commercial landscape, schools and parks shall be reduced by 35%.
8. Treated effluent will be used for dust control.
9. Golf course irrigation will be restricted to greens and tees if raw water is sole source. Raw water delivery will be reduced by 35% where treated effluent is being used.

Stage IV – 50% (Mandatory)

1. Stage III restrictions apply. Public will be urged to keep indoor usage to minimum needs.
2. Outdoor watering by hose or irrigation system will be prohibited. Watering from hand containers will be permitted. Golf courses will use treated effluent or well water sources.
3. New water service applications will be granted upon the condition that water shall be used only for interior purposes and landscaping shall be delayed until repeal of Stage IV restrictions.
4. The Board will consider instituting an emergency water delivery rate schedule similar to that shown below for all treated water accounts to encourage conservation and meet reduction goals. If adopted, water consumption charges shall be based upon actual water used per month times the rate factors shown.

Table 7.2
Emergency Water Delivery Rates

USAGE BRACKET	RATE FACTOR
First 300 cu. ft. per month	Current lowest tier price of established rate
301 to 800 cu. ft. per month	1.25 times the lowest tier price
801 to 1300 cu. ft. per month	1.50 times the lowest tier price
1301 to 1800 cu. ft. per month	1.75 times the lowest tier price
1801 to 2300 cu. ft. per month	2.00 times the lowest tier price

7.2.6 Enforcement

LAW:

10632 (f) Penalties or charges for excessive use, where applicable.

Under the mandatory Conservation Programs and in addition to, and/or exercise of, any and all lawful remedies, the CCWD Board will consider instituting the following course of enforcement actions to apply to violations of Stage III and IV irrigation and outdoor water use restrictions.

1. Written warning from District that further violation will result in possible restriction of water service.

2. Customer's water service shall be restricted by a flow-restricting device for a period of at least 30 days. The device shall be removed upon payment of an administrative charge and the cost to install and remove the device.

3. Customer's water service shall be restricted by a flow-restricting device installed by the District. The device shall remain in place until the Board of Directors repeals the state of emergency or threat of emergency or shortage and upon payment of an administrative charge and the cost to install and remove the device.

4. District may pursue a violation of a conservation restriction under Water Code Section 31029 which states in part, "…it is a misdemeanor for any person to use or apply water received from the district contrary to or in violation of the restriction or prohibition, until the ordinance has been repealed or the emergency or threatened emergency has ceased, and, upon conviction thereof, that person shall be punished by imprisonment in the county jail for not more than 30 days or by fine of not more than six hundred dollars ($600), or by both the fine and imprisonment.

7.2.7 Analysis of Impacts

LAW:

10632 (g) An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.

The tables below examine, on a gross basis, the primary impacts from instituting the various stages of a water conservation program. Because their budgets are combined, the Sheep Ranch service area is included within Ebbetts Pass.

The "Net Change" columns show the net reduction in revenue during implementation of the various conservation program stages in comparison to a normal budget year. Fiscal 2002/2003 numbers are used to establish a basis.

The largest impacts from a reduction in water use come from a loss in consumptive use based revenue, a decline in power costs and a decline in chemical costs. The tables below assume that consumption over a 12-month period as well as the listed revenues and expenses all decline in proportion to the target percentage of the conservation stage. This assumption and the resulting impacts are conservative from the standpoint that reduction targets in the more critical stages may only be met during the time in which landscape irrigation normally occurs.

The tables do not consider the positive impact of implementing a tiered rate structure. CCWD does not have the practical experience with a rate structure of this type to determine the level of additional income that it would generate.

If tiered rates are not implemented or if tiered rates prove inadequate to buffer the anticipated revenue shortfall, CCWD staff will request the Board to consider authorizing the use of current year asset recovery revenue (ARR). The table titled "Asset Recovery Revenue" depicts the ARR currently being generated by each area. The ARR is deposited into a restricted reserve account for replacement activities within the service area of origin.

It is projected that the above measure, if adopted by the Board, would prove adequate to address revenue shortfalls for the majority of cases. The additional revenue from a tiered rate structure may fill the gap in the remaining cases, however, the Jenny Lind and Copper Cove areas appear to be the most vulnerable to the impacts of the last two Stages of conservation.

If tiered rates and the use of current year ARR still prove inadequate to buffer the revenue shortfall, CCWD staff will bring a recommendation to the Board to also utilize current equity fund balance (a.k.a. operating reserves).

TABLE 7.3
Normal Year Budget

SYSTEM	CONSUMPTIVE REVENUE	POWER EXPENSE	CHEMICAL EXPENSE	NET REVENUE
Ebbetts Pass	$431,106	($245,000)	($44,000)	$142,106
Copper Cove	$357,456	($92,000)	($26,000)	$239,456
Jenny Lind	$448,860	($105,000)	($52,500)	$291,360
West Point	$40,550	($16,000)	($7,500)	$17,050

TABLE 7.4
20% Consumption Reduction Impact

SYSTEM	CONSUMPTIVE REVENUE	POWER EXPENSE	CHEMICAL EXPENSE	NET REVENUE	NET CHANGE
Ebbetts Pass	$344,885	($196,000)	($35,200)	$113,685	($28,421)
Copper Cove	$285,965	($73,600)	($20,800)	$191,565	($47,891)
Jenny Lind	$359,088	($84,000)	($42,000)	$233,088	($58,272)
West Point	$32,440	($12,800)	($6,000)	$13,640	($3,410)

TABLE 7.5
35% Consumption Reduction Impact

SYSTEM	CONSUMPTIVE REVENUE	POWER EXPENSE	CHEMICAL EXPENSE	NET REVENUE	NET CHANGE
Ebbetts Pass	$280,219	($159,250)	($28,600)	$92,369	($49,737)
Copper Cove	$232,346	($59,800)	($16,900)	$155,646	($83,810)
Jenny Lind	$291,759	($68,250)	($34,125)	$189,384	($101,976)
West Point	$26,358	($10,400)	($4,875)	$11,083	($5,986)

TABLE 7.6
50% Consumption Reduction Impact

SYSTEM	CONSUMPTIVE REVENUE	POWER EXPENSE	CHEMICAL EXPENSE	NET REVENUE	NET CHANGE
Ebbetts Pass	$215,553	($122,500)	($22,000)	$71,053	($71,053)
Copper Cove	$178,728	($46,000)	($13,000)	$119,728	($119,728)
Jenny Lind	$224,430	($52,500)	($26,250)	$145,680	($145,680)
West Point	$20,275	($8,000)	($3,750)	$8,525	($8,525)

Table 7.7
Asset Recovery Revenue

SYSTEM	CONNECTIONS	ANNUAL REPLACEMENT REVENUE
Ebbetts Pass	5,180	$170,940
Copperopolis	1,614	$52,262
Jenny Lind	2,687	$88,671
West Point	527	$17,391

7.2.8 Draft Ordinance

LAW:

10632 (h) Requires a draft water shortage contingency resolution or ordinance.

Refer to the attached Ordinance 77-1. This Ordinance was adopted and implemented during the 76/77 drought and will serve as a draft for future water shortage contingency ordinances.

Method of Determining Reductions

LAW:

10632 (i) Requires a mechanism for determining actual reductions in water use.

Each CCWD water treatment plant produces daily production records. These records will be used to quickly determine whether demand within the individual service areas has been reduced in comparison to the same period in the prior year.

Additionally, all services are metered and individual account records are stored electronically. This will allow CCWD to make usage comparisons on an account-by-account basis over the same period in the prior year. This type of comparison will provide information needed to pursue enforcement actions.

SECTION 8: WASTEWATER AND RECYCLED WATER

LAW

10633. The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. To the extent practicable, the preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies and shall include all of the following:

10633 (a) A description of the wastewater collection and treatment systems in the supplier's service area…

8.1 Recycled Water

Neither the County nor CCWD have developed specific policy or optimization plans for recycled wastewater. However, CCWD currently utilizes recycled wastewater for the irrigation of two golf courses in the Ebbetts Pass and the Jenny Lind areas. The irrigation of these facilities is a major component of the disposal of wastewater for these service areas. In 2003, another golf course in the Copper Cove system will be using recycled wastewater for irrigation. A total of four 18-hole golf courses and one 9-hole golf course have been proposed for the Copper Cove area. District practice requires that golf courses use recycled wastewater for irrigation supplemented by raw water as available. Opportunities to use recycled wastewater beyond golf course irrigation, including dual use systems, will be evaluated with master plan updates. Table 8.1 summarizes the current and projected recycled water use.

Table 8.1
Current and Projected Recycled Water Use, afa

SYSTEM	2000	2005	2010	2015	2020
Ebbetts Pass	60	60	60	60	60
Jenny Lind	130	245	245	245	245
Copper Cove	0	375	835	1300	1600
TOTAL	190	565	1,140	1,605	1,905

8.2 Wastewater System Description

The District operates six major treatment facilities; two are aerated lagoons, three are extended-air type facilities, and one is a re-circulating bed filter system. The collection and transportation systems consist of about 125 miles of 6 to 10 inch lines, 44 pump stations, and facilities for emergency power and odor control. The oldest system was constructed in 1972/73. The effluent produced by the treatment facilities is disposed on-site by two principal means - subsurface infiltration galleries (leach field) and spray disposal. Currently, reclamation of treated effluent supplies water to two golf courses. Presented below is a description of the six major wastewater systems:

8.2.1 Ebbetts Pass Improvement District

Forest Meadows Community – The treatment and recycle plant consists of a complete mix secondary aeration pond, a sludge settling pond, deep-bed sand filtration, and UV disinfection. Storage ponds and golf course irrigation is the current method of effluent disposal. The service area contains approximately 11.3 miles of pipeline. The system serves 460 connections.

In 1999, CCWD upgraded the wastewater treatment plant to tertiary treatment to provide recycled water for irrigation of the Forest Meadows Golf Course.

Arnold Community – The treatment plant consists of an extended oxidation ditch (racetrack), clarification, chlorination, and sand filtration. Effluent disposal is via on-site leach field and spray irrigation on pasture. Approximately 16 miles of pipeline serve 420 connections.

Douglas Flat/Vallecito Community– The treatment plant consists of two separate extended aeration package plants. Storage ponds and pasture irrigation are the current method of effluent disposal. The system serves 250 connections with approximately 10.6 miles of pipeline.

8.2.2 Copper Cove Wastewater Treatment and Reclamation Plant

This facility consists of two separate treatment plants. The first plant includes primary aeration ponds and disinfection. The second plant is a reclamation plant that takes treated wastewater from the above-mentioned storage ponds and provides tertiary Microfloc process of coagulation-flocculation and two-stage filtration followed by chlorine disinfection. The treated effluent complies with Title 22 disinfected tertiary requirements and is used for golf course irrigation. The system serves 1,125 connections and contains approximately 20 miles of pipeline.

In 2000, CCWD constructed the tertiary treatment reclamation plant adjacent to the wastewater treatment plant. The reclamation plant takes secondary treated wastewater and provides tertiary treatment. The tertiary wastewater is scheduled to be delivered to the adjacent Saddle Creek Golf Course in 2003.

8.2.3 Jenny Lind Improvement District

Wastewater collection and treatment for the Jenny Lind area is provided by the La Contenta facilities. The treatment plant and reclamation plant consist of extended aeration activated sludge, clarification, sand filtration, and disinfection to Title 22 tertiary standards. The treated effluent is stored and used for golf course irrigation. The system serves 577 connections and contains approximately 25 miles of pipeline.

8.2.4 West Point

The West Point wastewater system serves 158 connections for the West Point community. Approximately 13 miles of pipeline transports wastewater to a recirculating bed filter system. The effluent is disposed onsite through spray irrigation.

Table 8.2 summarizes the amount of wastewater flows for the six major treatment facilities.

Table 8.2
Wastewater Generation

FACILITY	PERMITTED AVERAGE DRY WEATHER FLOW, MGD	2000 WASTEWATER FLOW MGD
Forest Meadows	0.19	19.7
Arnold	0.175	22.1
Vallecito	0.065	16.5
Copper Cove	0.20	65.1
La Contenta	0.170	47.3
West Point	0.058	8.9
TOTAL	-	179.6

SECTION 9: APPENDIX

Appendix 1: Urban Water Management Plan Act

Appendix 2: CCWD Urban Water Management Plan Adoption

- Public Notice, CCWD Draft Urban Water Management Plan (mailing)
- Public Notice, CCWD Draft Urban Water Management Plan (publication)
- CCWD Resolution #2002-71, Adoption of Urban Water Management Plan

Appendix 3: AB 3030 Groundwater Management Plan

Appendix 4: Education Programs

A) Brochures/Handouts

B) Calaveras River Watershed Management Plan Storyboards

Appendix 5: CCWD Ordinance 77-1, Prohibiting Nonessential Uses of Water

Appendix 6: Watershed Sanitary Survey Executive Summaries

A) Calaveras River

B) Stanislaus River

C) Upper Mokelumne River

Appendix 7: DWR Checklists